

Summative Assessment Review Day 2 (Units 3 & 4 - Chapters 4 & 5)

⊙ Equations (chapter 4 in text)

- > Set up equations from word problems
- > Solve equations (including equations with fractions)
- > Rearrange equations

Example 1: Solve

a) $8 + m = -2$
 $m = -10$

b) $4x = 28$
 $x = 7$

c) $5x + 8 = 3x + 2$
 $5x - 3x + 8 = +2$
 $5x - 3x = 2 - 8$
 $2x = -6$
 $x = -3$

d) $\frac{x}{6} + 4 = 3$
 $\frac{x}{6} = -1$
 $x = -6$

e) $3(2x - 4) = 9x + 3$
 $6x - 12 = 9x + 3$
 $6x - 9x = 3 + 12$
 $-3x = 15$
 $x = -5$

f) $\frac{x+2}{2} = \frac{x-1}{5}$
 $5(x+2) = 2(x-1)$
 $5x + 10 = 2x - 2$
 $5x - 2x = -2 - 10$
 $3x = -12$
 $x = -4$

g) $\frac{3k}{2} - \frac{k+3}{3} = 8 - \frac{k+2}{4}$
 $6(3k) - 4(k+3) = 8 \times 12 - 3(k+2)$
 $18k - 4k - 12 = 96 - 3k - 6$
 $18k - 4k + 3k = 96 - 6 + 12$
 $17k = 102$
 $k = 6$

Example 2: (Rearranging equations)

The formula for the perimeter of a rectangle is $P = 2L + 2W$, where L is the length and W is the width of the rectangle. Which is the formula for the length?



$P = 2L + 2W$

$\frac{P - 2W}{2} = \frac{2L}{2}$

a. $\frac{2P - 2W}{2} = L$

c. $\frac{P - 2W}{2} = L$

$\frac{P - 2W}{2} = L$

b. $\frac{P - W}{2} = L$

d. $\frac{2P - W}{2} = L$

Modelling with Graphs (chapter 5 in text)

> Direct/Partial Variation

⊖ Direct Variation:

$y = mx$ initial value is 0

⊖ Partial Variation:

$y = mx + b$ initial value is NOT 0

> First Difference Tables

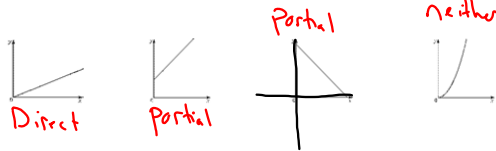
> Slope ⊖ constant of variation

⊖ rate of change or unit rate

$m = \frac{\Delta y}{\Delta x}$

$m = \frac{y_2 - y_1}{x_2 - x_1}$

Example 3: Identify each of the following as direct variation, partial variation or neither.



Example 4:

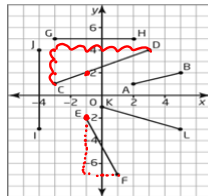
The table is for a linear relation. Unfortunately, one error was made in copying the table. Find the error and copy the table with the correction.

x	2	-1	-4	-7	-10
y	-5	-2	1	4	7

x	y	
2	-5	$-2 \cdot -5 = 10$
-1	-2	$0 - (-2) = 2$
-4	1	$4 - 0 = 4$
-7	4	$4 - 1 = 3$
-10	7	$7 - 4 = 3$

Example 5:

Examine the set of line segments.



a) Name the line segment that has the steepest negative slope. **E-F**
Express the slope in decimal form.

$\frac{\text{Rise}}{\text{Run}} = \frac{-5}{2} = -2.5$

b) What is the slope of CD? IJ? GH?

$C-D = \frac{3}{6} = \frac{1}{2}$ IJ = undefined
 $GH = 0$

Example 6:

What is the slope of the line segment joining the points P(0, 7) and B(-2, -4)?

$\frac{y_2 - y_1}{x_2 - x_1} = \frac{-4 - 7}{-2 - 0} = \frac{-11}{-2} = \frac{11}{2}$

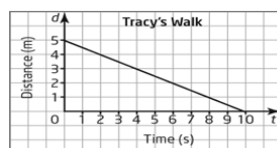
Example 7:

The Pronghorn antelope is the fastest North American mammal. It can run 200 m in about 7.5 s. What is the average speed of this antelope? (speed is a rate of change - this is a slope and slope as a rate of change is the same as a unit rate.)

$\frac{200 \text{ m}}{7.5 \text{ s}} = 26.7 \text{ m/s}$

Example 8:

The distance-time graph shows Tracy's motion in front of a motion sensor.



a) Identify the d-intercept and explain what it means. **(0, 5)**

b) Identify the t-intercept and explain what it means. **(10, 0)**
she starts 5m away
it took her 10 seconds to reach the sensor